

RECEIVED
CENTRAL FAX CENTER

REMARKS

JAN 17 2007

The present amendment is prepared in accordance with the requirements of 37 C.F.R. § 1.121. Applicants appreciate the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the remarks below.

Claim 8 has been amended to clarify that which applicant regards as the invention. It is submitted that the claim amendments would not require a further search of the art since these limitations were previously considered by the Examiner, as is recited in claims 21 and 101.

For purposes of appeal, the claims have merely been amended to overcome 35 U.S.C. 112 rejections, and have not been substantively amended.

No new matter has been added.

Claim Objections

The Examiner has objected to claim 14 due to informalities. It is submitted that claim 14 has been amended to overcome these informalities, and as such, the objection thereof is now moot.

No new matter has been added.

Claim Rejections - 35 USC § 112

The Examiner has also rejected claims 8, 13, 15, 21, 23, 24 and 41-43 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In the previous amendment, applicants inadvertently included antecedent basis errors in claims 8, 13, 15, 21, 23, 24 and 41 by referring

to the plurality of fibers with diameters of less than about 1000nm as "nanofibers" (which is supported in the specification).

The Examiner has also objected to claims 8, 13, 15, 21, 23, 24, and 41, stating that such claims are vague and indefinite since the precipitation process is unclear to the Examiner. In particular, the Examiner questions whether the precipitation occurs at the surface of the nanofibers and/or said agent(s), which the Examiner interprets as the agent precipitating on itself. Applicants disagree with the Examiner's interpretation.

It is submitted that in the previous amendment, these claims recite that the microbiological interception enhancing agent comprises a cationic material having a counter ion associated therewith and when [this cationic material with its counter ion] exposed to an aqueous biologically active metal salt solution forms a colloidal metal precipitate that precipitates on a portion of a surface of some fibers and/or active agents. That is, the cationic material with its counter ion is exposed to the aqueous biologically active metal salt solution to form the colloidal metal precipitate on a portion of a surface of some fibers and/or active agents. However, for clarification purposes only, and not to add any further substantive limitations thereto, applicants have amended claims 8, 13, 15, 21, 23, 24, and 41 to correct for grammatical errors to more clearly define that which applicants regard as the invention.

Claim 24 has also been amended for clarification purposes.

Since no new matter has been added, and the amendments to the claims are merely for clarification and/or antecedent basis errors, it is submitted that the amended claims overcome the rejections under 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 103

Claims 1-7, 9-12, 14, 16-20 and 22

The Examiner has maintained the rejection of claims 1-7, 9-12, 14, 16-20 and 22 under 35 USC §103(a) as anticipated by Giglia et al. (U.S. Patent No. 4,929,502). Applicants disagree.

Applicant submits that the cited Giglia patent is limited to fibrillated fiber precursors that are defined by their Canadian Standard Freeness in combination with their Tensile Strength when formed into a sheet. (Abstract.) The fibers can be used to make fabrics that comprise the fibrillated fiber alone or in combination with a toxic absorbing agent or filtration material, which may include activated carbon fibers or powders.

It is submitted that independent claims 1, 9, 11, 14 and 20 all include the limitation that the integrated paper of the present application includes a plurality of fibrillated fibers having an average fiber diameter of less than about 1000 nm (i.e., 1 micron). The Examiner states that Giglia teaches the same type of fibers as claimed, and the same particles including the size of such particles, citing Giglia at col. 6, ll.33-37. However, applicant points out that Giglia, at col. 6, ll. 33-37, only discloses that the activated carbon powder or particles have a particle size ranging

from about 0.1 microns to about 500 microns, preferably form about 1.0 microns to about 80 microns.

The Examiner cites to col. 1, ll. 43-51 of Giglia stating that it teaches that fibrillated fibers have diameters less than 1 micron. Applicant disagrees with the Examiner and points out that the cited passage does not actually recite that fibrillated fibers have diameters less than a micron, but rather, merely recites that fibrillated fibers provide fine diameter fibrils as opposed to those of heavier spun having sizes of ten microns or greater. The passage merely recites that "it has been the experience that sizes of less than a micron (cross section) are required to entrap and bind fine particles in nonwoven and other composite structures" (col. 1, ll. 43-51), and does not correlate these sizes to those of the diameters of fibrillated fibers. Moreover, Giglia does not disclose or contemplate fibrillated fibers have an average fiber diameter of less than about 1 micron (claims 1, 20 and 41), or even more specifically, fibrillated fibers with an average fiber diameter of less than about 0.4 microns (claims 9, 11 and 14.).

Applicant further submits that Giglia does not disclose, contemplate or suggest that such fibrillated fibers (with average diameters of less than about 1 micron, preferably less than about 0.4 microns) in combination with active agents including metals, metal salts, metal oxides, alumina, silicates, ceramics, zeolites, diatomaceous earth, activated bauxite, fuller's earth, calcium sulfate, titanium dioxide, magnesia, magnesium hydroxide, magnesium oxide, manganese oxides, iron oxides, perlite, talc, clay, bone char, calcium hydroxide, calcium salts, or combinations thereof, nor an integrated paper made thereby having a mean pore

size of less than or equal to about 2 microns (claims 1 and 41). Giglia also does not disclose or suggest the instant claimed fibrillated fibers admixed with silver oxide particles (claim 9), admixed with one or more acid neutralizing agents (claim 11), admixed with a lead reducing agent (claim 20), or that the fibrillated fibers are fibrillated lyocell fibers (claim 14).

Claims 8, 15, 21, 23-24 and 41-43

The Examiner has also rejected claims 8, 15, 21, 23-24 and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giglia et al., cited above, in view of Sawan et al., (US Patent No. 5,681,468) or Sawan et al., (US Patent No. 5,817,325).

In the office action, the Examiner states that Giglia teaches the filter medium including the integrated paper as claimed, and recognizes that Giglia does not teach having a microbial interception enhancing agent on selected fibers. However, the Examiner states that Sawan et al. teaches the same interception enhancing agent, see the US '325, column 8, lines 45-68 and US '468, column 7, line 64 through column 8, line 36. The Examiner also states that Sawan et al. teach the advantages of using such interception agents, i.e., the formulation kills microorganisms on contact without leaching from the matrix, see abstract of the US '325 and columns 7-8 of the US '468. In view of the foregoing, it is the Examiner's position that the using the interception agents as taught by Sawan et al., in both patents, as the antimicrobial agent on Giglia et al. filter medium would have been

obvious to one of ordinary skill in the art in order to obtain the advantages discussed above.

Applicant disagrees with the Examiner's rejection of claims 8, 15, 21, 23-24 and 41-43.

Again, the Examiner recognizes that Giglia does not teach or suggest a microbial interception enhancing agent on selected fibers, as is currently claimed. It is submitted that the Sawan patents do not overcome this deficiency of Giglia since neither Sawan patent teaches a microbiological interception enhancing agent on a portion of a surface of some fibers and/or active agents. Nor do these patents even contemplate or suggest that a microbiological interception enhancing agent can reside on portions of some fibers and/or active agents. It is only applicant's disclosure that teaches these limitations, which of course, is improper as a hindsight reconstruction of applicant's invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983) (Hindsight based on reading of the patent in issue may not be used to aid in determining obviousness). The cited references, and not in retrospect, must suggest doing what Applicant has done. *In re Skoll* (CCPA 1975) 187 USPQ 481. Likewise, hindsight and the level of ordinary skill in the art may not be used to supply a component missing from the prior art references. *Al-Site Corp. v. VSI International, Inc.*, 174 F.3d 1308, 1324, 50 USPQ2d 1161, 1171 (Fed. Cir. 1999).

Further, the Sawan patents do not disclose or suggest a microbiological interception enhancing agent that comprises a cationic material having a counter ion associated therewith, which when exposed to an aqueous biologically active

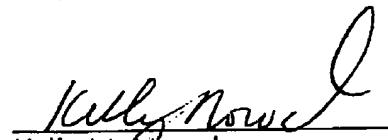
metal salt solution, forms a colloidal metal precipitate onto at least a portion of the surface of at least some said fibers and/or said active agent, as is currently claimed. The Sawan patents are limited to a bacteriostatic or bacteriocidal of a metal or metal oxide or metal salt coated on the filter, and as such, neither Sawan patent remedies the deficiencies of Giglia.

Applicants again point out that the invention claims priority on several patent applications which claim the microbiological interception enhancing agent set forth at pages 13 to 17 of the instant specification, and in 10/286,695, issued as U.S. Patent No. 6,835,311, U.S. Patent No. 6,835,311, which is fully incorporated by reference. Specification, p.17, II.11-13. U.S. Patent No. 6,835,311 claims priority from U.S. Provisional Application No. 60/354,062 filed on January 31, 2002.

In view of the foregoing, and under the applicable patent law in this area, it is respectfully submitted that the claims are properly allowable under 35 USC 103.

It is respectfully submitted that the application has now been brought into a condition where allowance of the entire case is proper. Reconsideration and issuance of a notice of allowance are respectfully solicited.

Respectfully submitted,



Kelly M. Nowak
Reg. No. 47,898

DeLIO & PETERSON, LLC
121 Whitney Avenue
New Haven, CT 06510-1241
(203) 787-0595
kxin100027000amdc-af_01-17-07.doc